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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/955,099	09/19/2001	Tadashi Kojima	214136US2S	9629

22850 7590 04/28/2004

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ALEXANDRIA, VA 22314

EXAMINER

CHUNG, PHUNG M

ART UNIT	PAPER NUMBER
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2133

DATE MAILED: 04/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/955,099

Applicant(s)

KOJIMA, TADASHI

Examiner

Phung My Chung

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 4 and 7.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

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1. Claim 6 is rejected under 35 U.S.C. 101 because the claim merely manipulates data without producing a useful, concrete and tangible result. Therefore, the claimed invention is directed to non-statutory subject matter.

2. Claims 2-5, 7 and 9 are objected to because of the following informalities:

Note that claims 2-5, 7 and 9 should be rewritten in English way, for example:

As per claim 2, line 1, "wherein" should be changed to --the method comprising the steps of:--;

Lines 2-4, "digital data is processed...columns" should be changed to --processing digital data...--

Lines 5-9, "data is arranged..." should be changed to -- arranging data...--;

Lines 10-15, "(KxM) rowsxN columns matrix block is further constructed..." should be changed to -- further constructing ...--;

Lines 16-25, "on each column of (KxN) bytes of the matrix block, an error-correcting word PO-b((K/2)xQ bytes) is created..." should be changed to -- creating an error-correcting word PO-a((K/2)xQ bytes)...;

lines 26-28, "PO-a and PO-b are scattered and arranged into K information data blocks..." should be changed to -- scatting and arranging PO-a and PO-b into K information data blocks...--;

lines 29-33, "each column of N columns is formed..." should be changed to -- forming each column of N columns...--; and

lines 34-35, "the error-correcting word of P bytes is further added for each row of N bytes" should be changed to – further adding the error-correcting word of P bytes for each row of N bytes--.

As per claim 3, lines 3-6, "the even number...are aggregated to create the PO-a" should be changed to – aggregating the event number....--; and

Lines 7-10, "the odd number rows...are aggregated..." should be changed to -- aggregating the odd number rows...--.

As per claim 4, lines 7-10, "the odd number rows..." should be changed to --aggregating the odd number rows...--.

As per claim 5, lines 2-6, "wherein when Q is 2 or more and M is an even number, the even number rows of all the information data blocks are aggregated..." should be changed to – wherein when Q is 2 or more and M is an even number, aggregating the even number rows of all the information data blocks...--.

3. Claims 6, 8 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claim 6, lines 1-40, the preamble of the claim is an apparatus claim, but the body of the claim does not recite any physical structure to perform these functions.

As per claim 8, this claim is a hybrid claim because the preamble of the claim is an apparatus, but the body of the claim is comprising the method steps.

As per claim 10, this claim is a hybrid claim because apparatus and method claims can not be claimed together in the same claim. Appropriate correction is required.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gyu-Hwan (JP 2000057700) in view of Tong et al (6,684,361).

As per claim 1, Gyu-Hwan discloses the invention substantially as claimed, comprising the steps of: constituting an outer parity of information data block as an error correction code; and

Further adding an overall error correcting code including the outer parity of the information data block. (See abstract and Fig. 5). Gyu-Hwan does not specifically disclose the step of: arranging data in bytes in a matrix direction to form information data block. However, the step of arranging data in bytes in a matrix direction to form information data block is inherent in the system of Gyu-Hwan. This arranging step of data in bytes in a matrix direction to form information data block is also disclosed by Tong et al. (See col. 4, lines 5-38). Therefore, it would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to incorporate the step of arranging data in bytes in a matrix direction to form information data block for interleaver

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as taught by Tong et al into the invention of Gyu-Hwan for convenience and clarity, that rows and columns can be interchanged without changing the function of the interleaver.

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 2-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Tetsuya (EP 0 481 752 A1).

Tetsuya discloses the invention substantially as claimed, comprising the steps of:

Processing digital data in bytes to configure one information data block in bytes of rows and columns;

Arranging data in bytes in the information data block...;

Constructing rows and columns matrix block...;

Creating an error correcting word...;

Scattering and arranging PO-a and PO-b into K information data blocks...;

Forming each column of N columns as two sets of Reed-Solomon code... ; and

Adding an error correcting word for each row of N bytes. (See abstract; Fig. 5; col. 1, lines 5-11, and lines 47-53; and col. 8, lines 17-22).

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phung My Chung whose telephone number is 703-305-9686. The examiner can normally be reached on Monday to Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on 703-305-9595. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



PHUNG M. CHUNG  
PRIMARY EXAMINER